

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 18, 20, 26-29 and 31-44 are pending, with claims 1, 18, 20 and 26-28 amended, claims 33-44 added, and claims 2, 4-7, 9, 14, 21-25 and 30 cancelled without prejudice or disclaimer by the present amendment. Claims 1, 18 and 35 are independent.

In the Official Action, claims 1-2, 4-7, 9, 14, 18 and 20-32 were rejected under 35 U.S.C. § 102(a)/102(e) as being anticipated by Tarsa (U.S. Patent No. 6,614,056); and/or claims 1-2, 4-7, 9, 14, 18 and 20-32 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Tarsa; claims 1-2, 4-7, 9, 14, 18 and 20-32 were rejected under 35 U.S.C. § 102(e) as being anticipated by Katayama (U.S. Patent No. 6,903,374); claims 1-2, 4-7, 9, 14, 18 and 20-32 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Katayama; and claims 1-2, 4-7, 9, 14, 18 and 20-32 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Tarsa and Katayama.

Claims 1, 4-5, 14, 18 and 27-28 are amended, and claims 33-44 are added to recite additional features described in Applicant's originally filed specification.¹ No new matter is added.

Briefly recapitulating, amended claim 1 is directed to

An LED, comprising:

a first gallium nitride layer;

a first electrode at one portion of and above the first gallium nitride layer;

¹ Specification, Fig. 8.

an active layer above the first gallium nitride layer;
a second gallium nitride layer above the active layer;
a plurality of transparent electrodes above the second gallium nitride layer,

wherein one of the plurality of transparent electrodes is electrically connected to, and is physically isolated from, another of the plurality of transparent electrodes;

a second electrode above the second gallium nitride layer; and

a plurality of connection units, each connection unit electrically and commonly connecting a respective one of the plurality of transparent electrodes with the second electrode,

wherein the plurality of connection units are formed of a material different from the plurality of transparent electrodes.

Tarsa describes an LED having a core with epitaxially grown p- and n-type layers, and an epitaxially grown active layer between p- and n-type layers. A first current spreader layer is included adjacent to the LED core. The LED can also include a second spreader layer on the LED core opposite the first spreader layer. It is disposed between the second contact and fingers, and the LED core. The spreader layer is more conductive than the LED core layer adjacent to it thereby allowing current to more freely flow from the contact and fingers, into the second spreader layer and throughout the LED core.

In one embodiment of Tarsa, a current spreading layer 18 (second spreader layer) is deposited on conductive layer 16 to facilitate current spreading across conductive layer 16 and into the active layer 14. The second spreader 18 may also be formed of a transparent or semitransparent conducting material. In another embodiment, second contact 91 is deposited in the center of the second spreader layer 92, with two parts of a conductive branch 93 running in

opposite directions on the second spreader layer, from the contact 91 and down the LED's longitudinal centerline.

Katayama describes a p-electrode formed at the light-emerging side of a light-emitting diode (LED). The LED includes: (a) an n-type semiconductor substrate; (b) an n-type cladding layer formed over the n-type semiconductor substrate; (c) an active layer formed on the n-type cladding layer; (d) a p-type cladding layer formed on the active layer; (e) a p-type contact layer formed over the p-type cladding layer, with a p-type semiconductor layer between the p-type cladding layer and the p-type contact layer; and (f) an n-electrode formed on the back face of the n-type semiconductor substrate.

However, Tarsa and Katayama each do not disclose or suggest, individually or in combination, a) a plurality of transparent electrodes above a second gallium nitride layer, *wherein one of the plurality of transparent electrodes is electrically connected to, and is physically isolated from, another of the plurality of transparent electrodes*; b) a plurality of connection units, *each connection unit electrically and commonly connecting a respective one of the plurality of transparent electrodes with a second electrode* above the second gallium nitride layer, and c) wherein *the plurality of connection units are formed of a material different from the plurality of transparent electrodes*.

Turning now to claim 18, Applicant submits that Tarsa and Katayama each do not disclose or suggest, individually or in combination, a transparent electrode above a second gallium nitride layer, wherein the transparent electrode comprises a plurality of patterns, wherein *one of the plurality of patterns is physically isolated from another of the plurality of patterns*, and wherein at least two of the plurality of patterns have *striped-shapes*.

Turning now to claim 35, Applicant submits that Tarsa and Katayama each do not disclose or suggest, individually or in combination, a plurality of transparent electrodes directly above a P-type layer, wherein *one of the plurality of transparent electrodes is physically isolated from another of the plurality of transparent electrodes*.

MPEP § 2131 notes that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP § 2131.02. “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Tarsa and Katayama each do not disclose or suggest all of the features recited in claims 1, 18 and 35, Tarsa and Katayama each do not anticipate the invention recited in claims 1, 18 and 35, and all claims depending therefrom.

As none of the cited art, individually or in combination, disclose or suggest at least the above-noted features of independent claims 1, 18 and 35, Applicant submits the inventions defined by claims 1, 18 and 35, and all claims depending therefrom, are not rendered obvious by the asserted references for at least the reasons stated above.

MPEP 2141 notes that prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. MPEP 2141 further notes that the prior art reference (or references when combined) need not teach or suggest all the claim limitations. However, an obviousness-type rejection must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. MPEP 2141 goes on to list exemplary rationales that may support a conclusion of

obviousness. However, Applicant submits that the Official Action and the applied references present no objective evidence that would support an obviousness-type rejection of Applicant's amended claims based on one of these exemplary rationales.

Turning now to dependent claims 33-34 and 41-42, Applicant submits that Tarsa and Katayama each do not disclose or suggest, individually or in combination, at least two of a plurality of transparent electrodes (or patterns) that are parallel to each other and at least two of a plurality of transparent electrodes (or patterns) that have striped-shapes are perpendicular to an imaginary line between the first electrode and the second electrode. Thus, for independent reasons, dependent claims 33-34 and 41-42 patentably define over the applied references.

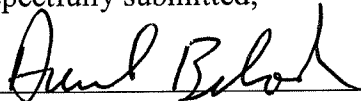
CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael E. Monaco, Reg. No. 52,041 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By  #42,325

Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
Attorney for Applicant